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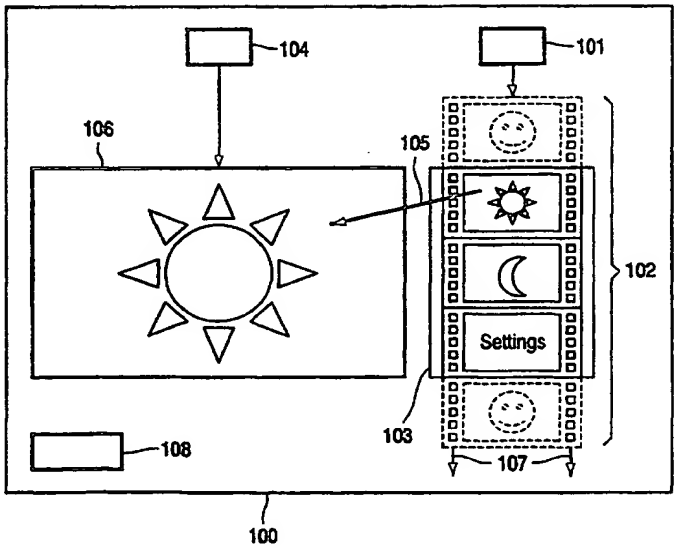
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVICE AND METHOD OF BROWSING AN IMAGE COLLECTION



(57) Abstract: A device (100) for browsing an image collection shows a continuously scrolling sequence (102) of representations (200, 202, 204, 206, 208) of images and commands in a browsing area (103). A user can select (105) a representation, which results in the full image being shown in a display area (106), or in the command being executed. Speed and direction of the scrolling (107) can be varied with an input stroke in the browsing area (103). The representations (200, 202, 204, 206, 208) could be shown together with border areas (201, 203, 205, 207, 209), which when selected limit the sequence (102) to the representations (200, 202, 204, 206, 208) belonging to the same category as the representation whose border area was selected. A general purpose computer can be programmed to function as the device (100) by means of a computer program product.

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Device and method of browsing an image collection

The invention relates to a device for browsing an image collection, comprising browsing means for showing a sequence of representations in a browsing area, each representation corresponding to an image from the image collection, and display means for showing, in response to a selection of a representation from said sequence, in a display area an image from the image collection corresponding to the selected representation.

The invention further relates to a method of browsing an image collection, comprising showing a sequence of representations in a browsing area, each representation corresponding to an image from the image collection, and showing, in response to a selection of a representation from said sequence, in a display area an image from the image collection corresponding to the selected representation.

A lot of people have image collections, usually stored as a collection of photos in a photo book. However, browsing the photos in a photo book is very time-consuming, since it is essentially a linear process. As more and more people have access to devices such as Photo CD viewers and computers, it seems logical to digitize these photos so they can be managed, sorted and browsed on the computer or on a television screen. Several photo development shops already offer the service of creating a CD-ROM with digital versions of the developed photos.

These digital images can be browsed using an image browsing device. This can be a standalone device, but also a part of another device. For example, it could be a computer program which runs on a general purpose computer and which can read images from a CD-ROM and show them on the computer's display device.

To show the available images to a user, conventional image browsing devices typically operate using thumbnails or other representations of images in the image collection. Such a representation is usually smaller than the actual image, so that a whole sequence of representations can be shown at once on the computer or television screen, rather than just one or two images at a time. A user can select a representation from the sequence using a mouse, keyboard or other input device, and then see the corresponding image.

However, this approach is not very effective when the number of representations in the sequence is too large to fit on one screen. Sometimes the representations and one actual image are shown together on the screen, leaving even less room for the sequence to be shown. To facilitate such large collections, image browsing devices typically use a metaphor borrowed from physical photo books. A portion of a sequence of representations is shown in some arrangement, typically a mosaic, and buttons are provided to go to the next "page in the photo book". Pressing such a button then results in another portion of the sequence being shown. This way, a user can browse through his digital photo collection just like he would browse through his physical photo collection.

A disadvantage of this approach is that it is not very easy to use. Physical photo books do not have buttons to turn to the next page. A user merely has to turn the page, which is an intuitive and well-known mechanism. Mixing the metaphor of a book with interface elements that are not logical to put in a book makes the device not very easy to use.

It is an object of the invention to provide a device according to the preamble, which allows for an easy, simple and intuitive way to browse an image collection.

This object is achieved in a device which is characterized in that the browsing means is arranged to show the sequence by continuously scrolling the sequence in the browsing area. When the sequence is scrolling by next to the display area, it is immediately obvious that a user can select an image from the scrolling sequence and have it shown on the display area. The sequence can be scrolled with varying degrees of smoothness. For example, the sequence can be scrolled by fits and starts, or by simply bumping the lower- or uppermost representation from the screen, moving the others down or up, respectively, and showing a next representation at the space thusly freed. Since the sequence is scrolling automatically, it is very easy to use, as no buttons need to be pressed or other action needs to be taken to view more representations than would fit on a display. The user can simply select images by e.g. clicking on the representations and view them on the display area as they scroll by.

Although scrolling is often implemented as showing portions of a sequence in a linear fashion, this does not necessarily have to be the case. The browsing area could be positioned in a circular fashion around the display area, so that the sequence could be scrolled around the image being shown. Scrolling in nonlinear directions could also be used, for example by making the sequence follow a predetermined path, or a path input by a user.

In an embodiment a representation is shown together with a border area, and the browsing means is arranged to show, in response to a selection of a border area of a representation, representations in the sequence belonging to the same category as the representation whose border area is selected. An advantage of this embodiment is that a border area can be used as an intuitive indicator of things associated with a representation. Selecting a border area then simply means "this type of image". The device can then filter out the representations which do not belong to the thusly selected category, and so limit the user's choices. This is particularly efficient for large image collections with many categories, as now an illustrative image can be shown for each category, and selecting that category immediately gives access to all the images in that category. Alternatively, the category could comprise subcategories, each indicated by a further illustrative image, so that hierarchically organized image collections can also be browsed efficiently.

In a further embodiment the selection of a representation comprises dragging the representation from the browsing area to the display area. Dragging a representation to an area where the corresponding image can be shown is a very intuitive way of manipulating images. The same action can also be used to apply other actions to the image, such as deleting it by dragging it to a trashcan. This provides a consistent interface for the device.

In a further embodiment a speed of the scrolling of the sequence is varied in accordance with a speed of an input stroke in the browsing area. An advantage of this embodiment is that it provides an intuitive way of varying the scrolling speed. A user now gets the impression that the scrolling can be accelerated or decelerated just like a wheel. The resulting speed may depend on whether the input stroke ends within or outside the browsing area. In the former case, the acceleration may be temporary and succeeded by a deceleration and eventual halting of the scrolling. The browsing means may simulate inertia and friction, for example, by gradually decreasing the scrolling speed, instead of instantaneously stopping the scrolling, in response to the user touching the browsing area. Similarly, the induced speed increase may be gradual, thus strengthening the impression of spinning a wheel.

In a further embodiment a direction of the scrolling of the sequence is varied in accordance with a direction of an input stroke in the browsing area. An advantage of this embodiment is that it provides an intuitive way of changing the direction of the scrolling. A user now gets the impression that the scrolling can be manipulated just like a wheel. Making the input stroke in a direction opposite to the current direction of the scrolling will reverse it. For nonlinear scrolling techniques the direction should be adapted to follow the direction of the input stroke.

In a further embodiment the browsing means is arranged to show interleaved in the sequence a representation of a command, and the device is arranged to execute the command when the representation of the command is selected. An advantage of this embodiment is that it does away with the need for a special-purpose menu bar, list of icons or buttons or other command selection tool. As the user will already turn to the browsing area for selecting an image, the browsing area is the most logical place to provide access to commands as well. Possible suitable commands could be turning the device off, changing a background color or other configuration setting, or to navigate between categories or category levels. For instance, a representation of the text "Back" could be shown, and selecting it would result in the browsing area showing a higher-level category.

It is an object of the invention to provide a method according to the preamble, which allows for an easy, simple and intuitive way to browse an image collection.

This object is achieved in a method which is characterized in that the sequence is shown by continuously scrolling the sequence in the browsing area.

The invention further relates to a computer program product enabling a programmable device when executing said computer program product to function as a device according to the invention.

These and other aspects of the invention will be apparent from and elucidated with reference to the embodiments shown in the drawing, in which:

Figure 1 schematically shows a device according to the invention; and

Figure 2 schematically shows a sequence of representations.

Throughout the figures, same reference numerals indicate similar or corresponding features. Some of the features indicated in the drawings are typically implemented in software, and as such represent software entities, such as software modules or objects.

Figure 1 shows a device 100 for browsing an image collection, comprising browsing means 101 for showing a sequence 102 of representations in a browsing area 103, each representation corresponding to an image from the image collection. The device 100 further comprises display means 104 for showing in a display area 106 an image from the

image collection. When a user makes a selection 105 from the sequence 102, the image corresponding to the selected representation is shown in the display area 106.

The image collection can comprise a collection of photos, pictures or drawings, where for each photo, picture or drawing a representation is provided. This representation could be an icon or thumbnail, either generated automatically by software or generated manually by a user or operator. The image collection could also comprise one or more video streams. In that case, the representations could be key frames corresponding to portions of the video stream or streams. Selecting a representation will then result in a corresponding moving image, i.e. the corresponding portion of a video stream, being shown.

The browsing area 103 and the display area 106 can for instance be two graphical windows on a computer screen, or be portions of the same window. Using two separate windows allows independent manipulation of the size and the position of each. In hand-held devices such as digital cameras only limited display screen space is available, so there the same display screen is used for both the browsing area 103 and the display area 106, presented next to each other. It may also be useful to present the browsing area 103 and the display area 106 in a wholly or partially overlapping fashion.

The browsing means 101 is arranged to show the sequence 102 by continuously scrolling 107 the sequence 102 in the browsing area 103. The sequence 102 is usually too large to fit in the browsing area 103 completely. This is indicated in Figure 1 by showing the portions of the sequence 102 that do not fit in the browsing area 103 in a dashed form. The scrolling 107 will result in those portions being shown eventually.

A typical way of implementing scrolling 107 is by presenting the representations in a linear list, either horizontally or vertically, which is moved in an appropriate direction. For a vertical list, as shown in Figure 1, the sequence 102 is moved downward. Of course, other directions are also possible. It is not even necessary for the representations to be presented as a linear list. The browsing area 103 could be positioned in a curved form around the display area 106, so that the sequence 102 is scrolled around the display area 106. The browsing area 103 could also be positioned at the straight or curved edge of the device, so that it is easy to locate and use for a user. The scrolling 107 could also follow a semi-random pattern in the browsing area 103.

In a vertical list, a number of representations from the sequence 102 are shown in the browsing area 103. Typically, these representations move down at a certain speed, and the lowermost representation currently being shown is gradually hidden from view. At the same time, a previously hidden representation, which in the sequence follows the uppermost

representation currently being shown, is gradually brought into view. The scrolling 107 of the sequence 102 can be made infinitely long by letting the first representation in the sequence 102 follow the last representation, or by automatically reversing the direction of the scrolling 107. Alternatively, the representations could move down by fits and starts instead of moving down gradually.

Instead of gradually moving down the representations at a certain speed, the complete set of representations currently being shown could also be moved down at regular intervals, so that the lowermost representation completely falls outside the browsing area 103. This gives an available space at the top of the browsing area 103, in which a previously hidden representation can then be shown.

It should be clear that the above techniques can easily be adapted for situations in which horizontal or nonlinear scrolling is desired.

The selection 105 of a representation preferably comprises dragging the representation from the browsing area 103 to the display area 106. It could also comprise clicking with a mouse pointer or other input device on the representation, or a voice command identifying a representation. It could also comprise an instruction from another device, connected to the device 100, which controls the device 100.

The speed of the scrolling 107 should be low enough to allow a user to browse the image collection. However, different users have different opinions on what constitutes "low enough". To accommodate this, the device 100 allows a user to enter an input stroke in the browsing area 103. This input stroke could be made with a finger, or with a stylus or other input device. The speed of the scrolling 107 of the sequence 102 is varied in accordance with the speed of said input stroke. If the stroke was made very quickly, this is an indicator that the speed of the scrolling 107 should be increased, and similarly for slow strokes the speed should be decreased. The pressure exerted by the user could be measured, and a acceleration or de-acceleration in dependence of the measured pressure could be performed. If the user enters the input stroke with a stroking gesture into the flow direction, the flow speed increases whereby the acceleration depends on the speed of the input stroke. If the stroke ends outside the browsing area 103, the flow speed remains at the higher level, or, in an alternative embodiment, gradually decreases to the original level. If the stroking gesture ends inside the flow zone 102, the flow stops or de-accelerates, dependent on whether friction is simulated.

Similarly, the direction of an input stroke in the browsing area 103 can be used to vary the direction of the scrolling 107 of the sequence 102. If the input stroke is in the

direction opposite to the direction of the scrolling 107, the scrolling 107 should now go in the reverse direction. The speed of the scrolling 107 can be made dependent on the speed of the input stroke, as described above.

The device 100 could be arranged to learn from the user's behavior. For instance, the default direction and speed of the scrolling 107 could be changed when the user provides the appropriate input stroke. This way, the user has to change the speed and direction only once to have the device 100 suit his or her tastes. If the device 100 is further equipped with user identification means 108 , the default direction and speed of the scrolling 107 could be changed whenever another user is identified, so that each user can use the device 100 according to his or her own tastes.

To facilitate the execution of commands, the browsing means 101 can be arranged to show interleaved in the sequence 102 a representation of a command. In the sequence 102 as shown in Figure 1, the representation of the command "Settings" is shown. When the representation of the command is selected, the command will be executed. In this case, a settings menu will come up. This settings menu can be presented in the display area 106, or it can be presented as a new sequence of commands in the browsing area 103, interleaved with representations of images or with the representations removed from view.

In Figure 2, a more detailed view of the sequence 102 of representations is shown. Note that in Figure 1, portions of the sequence were shown dashed to indicate that they were not presently being shown on the display area 103. Figure 2 shows the sequence 102, comprising representations of images 200, 202, 204 and 208. These are shown together with respective border areas 201, 203, 205 and 209. The border area is in this embodiment presented to look like the edges of a roll of film, with appropriate holes for a reel. This makes the display of the sequence 102 easy to recognize for a user. Of course other presentations are also possible.

Interleaved with the representations of images 200, 202, 204 and 208 is the representation 206 of a command, in the shown example the command "Settings". When this representation 206 is selected, a settings configuration menu will be shown by the device, as described above with reference to Figure 1.

When border areas are used, the user can in addition to selecting a representation 200, 202, 204, 208, also select the border area 201, 203, 205, 209 of one such representation. When this happens, the browsing means 101 determines which category the representation whose border area is selected belongs to, and then shows only the representations belonging to that category. The representation 206 of a command may also

have a border area 207, if only to provide a consistent presentation of the whole sequence 102. Selecting the border area 207 may have the same effect as selecting the representation 206 of a command, or may show all available commands. The available commands can be seen as a category of some kind, so it is logical to have the category selection mechanism work this way for commands.

When there are many categories and many images, it is now possible to show an illustrative image for each category. Selecting that category then gives access to all the images in that category. A hierarchical organization of categories and subcategories also becomes possible. Each subcategory could be indicated by a further illustrative image, and selecting the border area of the illustrative image will show the corresponding subcategory. In this case, a means should be provided to navigate to a hierarchically higher-level category, for instance by providing a representation of a command such as "Back" or "Up" interleaved the sequence 102.

An alternative way to present categories is to employ images of photo rolls, each roll corresponding to a category or an image collection. Selecting a roll allows browsing the corresponding image collection using the browsing area 103. Since the metaphor of the photo roll is already used to present a single image collection, the metaphor of multiple photo rolls for multiple image collections is very suitable.

Although the invention has been described with reference to particular illustrative embodiments, variants and modifications are possible within the scope of the inventive concept. Thus, for example, "continuously scrolling" comprises scrolling in a variety of ways, such as scrolling smoothly, by fits and starts, or by moving the sequence 102 at regular intervals. The invention can be implemented by means of hardware comprising several distinct elements, and by means of a suitably programmed computer, in the device claim enumerating several means, several of these means can be embodied by one and the same item of hardware. Thus, for example, the browsing means 101 and the display means 104 could be formed by one and the same piece of hardware or as a single computer program which comprises code for executing the functions of both.

The word "comprising" does not exclude the presence of other elements or steps than those listed in a claim. In the claims, any reference signs placed between parentheses shall not be construed as limiting the claim.

A "computer program" is to be understood as any software product stored on a computer-readable medium, such as a floppy disk, downloadable via a network such as the Internet, or marketable in any other manner.

CLAIMS:

1. A device (100) for browsing an image collection, comprising browsing means (101) for showing a sequence (102) of representations (200, 202, 204, 208) in a browsing area (103), each representation (200, 202, 204, 208) corresponding to an image from the image collection, and display means (104) for showing, in response to a selection (105) of a representation (200, 202, 204, 208) from said sequence (102), in a display area (106) an image from the image collection corresponding to the selected representation (200, 202, 204, 208), characterized in that the browsing means (101) is arranged to show the sequence (102) by continuously scrolling (107) the sequence (102) in the browsing area (103).

2. A device (100) as claimed in claim 1, characterized in that a representation (200, 202, 204, 208) is shown together with a border area (201, 203, 205, 209), and the browsing means (101) is arranged to show, in response to a selection (105) of a border area (201, 203, 205, 209) of a representation (200, 202, 204, 208), representations (200, 202, 204, 208) in the sequence (102) belonging to the same category as the representation (200, 202, 204, 208) whose border area (201, 203, 205, 209) is selected.

3. A device (100) as claimed in claim 1, characterized in that the selection (105) of a representation (200, 202, 204, 208) comprises dragging the representation (200, 202, 204, 208) from the browsing area (103) to the display area (106).

4. A device (100) as claimed in claim 1, characterized in that a speed of the scrolling (107) of the sequence (102) is varied in accordance with a speed of an input stroke in the browsing area (103).

5. A device (100) as claimed in claim 1, characterized in that a direction of the scrolling (107) of the sequence (102) is varied in accordance with a direction of an input stroke in the browsing area (103).

6. A device (100) as claimed in claim 1, characterized in that the browsing means (101) is arranged to show interleaved in the sequence (102) a representation (206) of a command, and the device (100) is arranged to execute the command when the representation (206) of the command is selected.

7. A method of browsing an image collection, comprising showing a sequence (102) of representations (200, 202, 204, 208) in a browsing area (103), each representation (200, 202, 204, 208) corresponding to an image from the image collection, and showing, in response to a selection (105) of a representation (200, 202, 204, 208) from said sequence (102), in a display area (106) an image from the image collection corresponding to the selected representation (200, 202, 204, 208), characterized in that the sequence (102) is shown by continuously scrolling (107) the sequence (102) in the browsing area (103).

8. A computer program product enabling a programmable device when executing said computer program product to function as a device (100) as defined in any one of the claims 1-6.

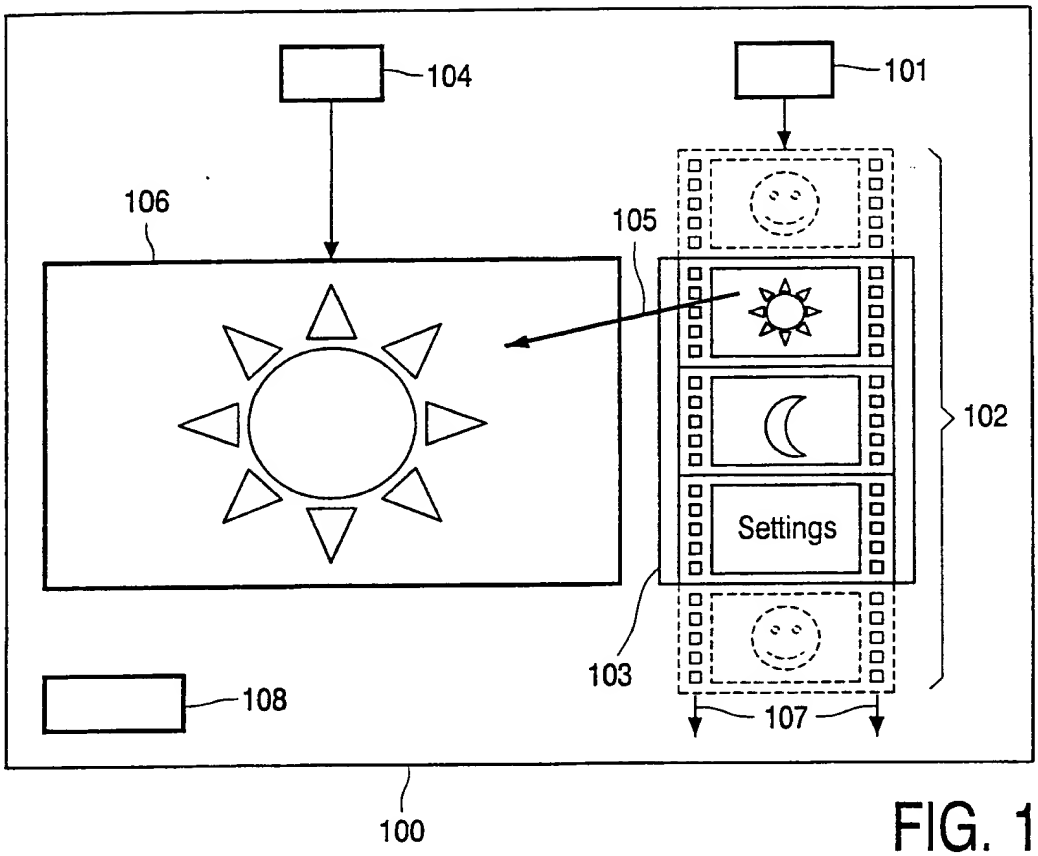
104
101
106
105
102
Settings
103
108
107
100

FIG. 1

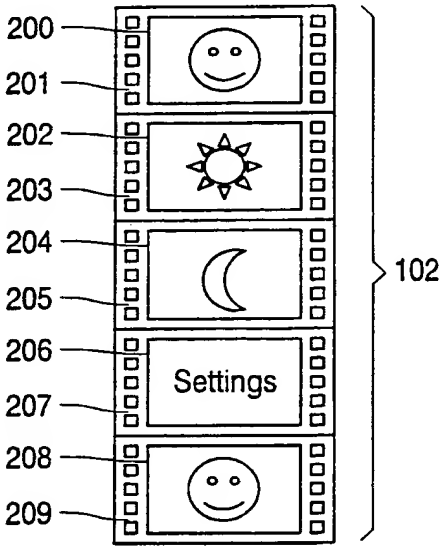
200
201
202
203
204
205
206
207
208
209
Settings
102

FIG. 2

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21 March 2002

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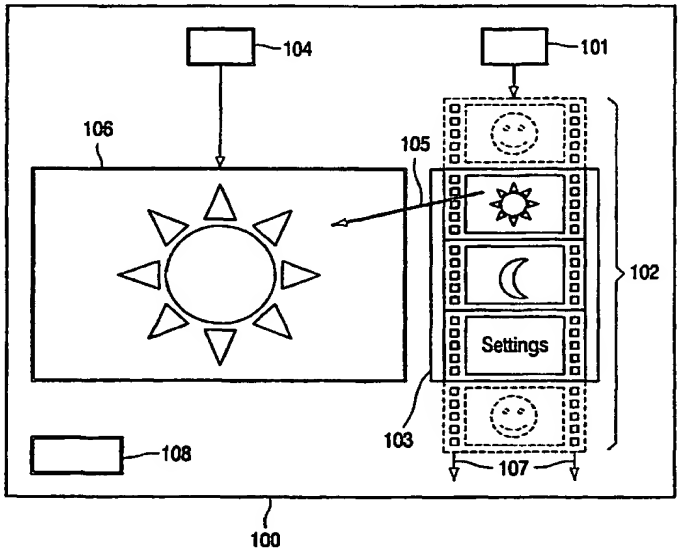

(57) Abstract: A device (100) for browsing an image collection shows a continuously scrolling sequence (102) of representations (200, 202, 204, 206, 208) of images and commands in a browsing area (103). A user can select (105) a representation, which results in the full image being shown in a display area (106), or in the command being executed. Speed and direction of the scrolling (107) can be varied with an input stroke in the browsing area (103). The representations (200, 202, 204, 206, 208) could be shown together with border areas (201, 203, 205, 207, 209), which when selected limit the sequence (102) to the representations (200, 202, 204, 206, 208) belonging to the same category as the representation whose border area was selected. A general purpose computer can be programmed to function as the device (100) by means of a computer program product.

WO 01/29702 A3

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

To:
INTERNATIONAAL OCTROOIBUREAU B.V.
Attn. GROENENDAAL, Antonius,
Prof Holstlaan 6
NL-5656 AA Eindhoven
NETHERLANDS

EFRT

17 AUG 2001

Applicant's or agent's file reference PHNL000372WO	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/EP 00/ 10286	International filing date *(day/month/year)* 18/10/2000
Applicant KONINKLIJKE PHILIPS ELECTRONICS N.V. et al.	

Date of mailing *(day/month/year)* 20/08/2001

1. [X] The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Fascimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. [ ] The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. [ ] **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

[ ] the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

[ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

Within **19 months** from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within **20 months** from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

2001 AUG 23 P 1:11

Name and mailing address of the International Searching Authority European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Marja Brouwers

Form PCT/ISA/220 (July 1998)

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped),whether

(i) the claim is unchanged;

(ii) the claim is cancelled;

(iii) the claim is new;

(iv) the claim replaces one or more claims as filed;

(v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."

2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."

3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."

4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international appplication is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
PHNL000372WO		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/EP 00/ 10286	18/10/2000	20/10/1999
Applicant		
KONINKLIJKE PHILIPS ELECTRONICS N.V. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

   [X] as suggested by the applicant.

   [ ] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 00/10286

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F3/033

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 678 015 A (GOH ENG LIM) 14 October 1997 (1997-10-14) abstract column 5, line 12 -column 6, line 42; figures 4-6 ---	1,3-8
X	"FILM REEL CONTROL - NEW WAY TO VIEW VIDEO" IBM TECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, US, vol. 37, no. 2B, 1 February 1994 (1994-02-01), pages 351-353, XP000433875 ISSN: 0018-8689 the whole document	1,3,7,8
A	---	4,5
	-/--	

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 August 2001	20/08/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Davenport, K

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 944 218 A (KONINKL PHILIPS ELECTRONICS NV) 22 September 1999 (1999-09-22) abstract column 1, line 46 -column 2, line 12; figures 1,2	1,7
A	EP 0 767 418 A (SONY CORP) 9 April 1997 (1997-04-09) abstract column 2, line 46 -column 3, line 25 column 7, line 20 -column 9, line 3; figures 8,9,11-16	1,2,4-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP 00/10286

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5678015 A	14-10-1997	NONE	
EP 0944218 A	22-09-1999	FR 2776415 A	24-09-1999
		JP 11327741 A	30-11-1999
EP 0767418 A	09-04-1997	JP 9097153 A	08-04-1997
		JP 9097162 A	08-04-1997
		JP 9097154 A	08-04-1997
		US 6184884 B	06-02-2001
		US 5898435 A	27-04-1999